

**MYRA FALLS OPERATION**  
**Vancouver Island, British Columbia**

**PRELIMINARY COMMENTS – MINERAL RESERVES AND MINERAL RESOURCES**

**N.C. Carter, November 16, 2004**

**General Statement**

The following comments regarding reserves and resources are based on a preliminary review of data acquired during a site visit between November 4 and 5. The site visit provided an opportunity for useful discussions with senior personnel including Ivor McWilliams and Finlay Bakker, the author of much of the material collected.

Mineral reserve and resource nomenclature has been modified somewhat from in-house usage to conform with "CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines" as specified by National Instrument 43-101 reporting requirements.

The mineral reserve and resource estimates prepared by Myra Falls personnel are utilize Minesight/Compass (referred to as Medsystem in previous years) modeling software. Separate block models are maintained for the H-W and the Battle-Gap deposits, the source of most current mine production. The drill hole databases, from which these models were built, are constantly being updated, and intermediate resources are calculated periodically. The mineral reserves and resources are estimated as at year end and published once per year unless there is a significant material change necessitating additional public disclosure.

The in-house reserve and resource estimates referred to in the following sections are as of December 31, 2003.

**Mineral Reserves**

Mineral reserves, as listed in Table 1, comprise mineralized areas which:

- (a) in the case of proven mineral reserves have the highest degree of confidence (0-20% error in contained metal) and are within 15 meters of a given diamond drill hole;
- (b) in the case of probable mineral reserves have a lower level of confidence (20-70% error in contained metal) and are within 30 meters of a given diamond drill hole;
- (c) are considered accessible and extractable from currently-active mine workings and are included in the current mining plan; and
- (d) have an NSR value equal to or exceeding a predetermined cut-off value which currently is \$C45.

Densities for the various mine areas listed in Table 1 range from 2.91 to 3.53 and average 3.25.

A separate extraction factor (mining loss) and dilution rate is applied to each mining area to calculate mineral reserve tonnages and grades. The result is regarded as a mineable mineral reserve with proven and probable status.

Note that the following table incorporates diluted tonnes and grades.

**Table 1 - Mineral Reserves (Diluted tonnes and diluted grades – extraction factor applied)**

| Area                               | Status   | Extraction Factor | Dilution   | Diluted Tonnes(000s) | NSR         | Zinc(%)    | Copper(%)  | Lead(%)    | Gold(g/t)  | Silver(g/t) |
|------------------------------------|----------|-------------------|------------|----------------------|-------------|------------|------------|------------|------------|-------------|
| 43 Block                           | Proven   | 72%               | 28%        | 583                  | \$55        | 4.2        | 1.2        | 0.3        | 1.5        | 29.2        |
| Battle                             |          | 69%               | 33%        | 2,764                | \$79        | 8.8        | 1.1        | 0.6        | 0.8        | 38.3        |
| Extension                          |          | 72%               | 31%        | 247                  | \$51        | 4.1        | 1.3        | 0.3        | 0.9        | 22.1        |
| Gap                                |          | 71%               | 30%        | 477                  | \$110       | 10.8       | 1.6        | 0.8        | 1.8        | 99.4        |
| H-W-Mine                           |          | 71%               | 25%        | 1,529                | \$61        | 4.7        | 1.3        | 0.5        | 1.7        | 40.5        |
| Sub-Total Proven                   |          | 70%               | 30%        | 5,600                | \$73        | 7.2        | 1.2        | 0.6        | 1.2        | 42.5        |
| 43 Block                           | Probable | 53%               | 33%        | 106                  | \$23        | 1.9        | 0.5        | 0.2        | 0.5        | 12.7        |
| Battle                             |          | 60%               | 31%        | 291                  | \$52        | 5.4        | 0.7        | 0.6        | 0.7        | 46.9        |
| Extension                          |          | 72%               | 31%        | 330                  | \$46        | 3.6        | 1.1        | 0.3        | 0.7        | 41.6        |
| Gap                                |          | 15%               | 30%        | 8                    | \$89        | 8.1        | 1.6        | 0.4        | 0.7        | 133.2       |
| H-W-Mine                           |          | 43%               | 22%        | 832                  | \$35        | 1.9        | 1.0        | 0.1        | 1.4        | 13.3        |
| Lynx                               |          | 5%                | 115%       | 28                   | \$68        | 6.2        | 1.3        | 0.6        | 1.0        | 53.8        |
| Price                              |          | 61%               | 30%        | 318                  | \$76        | 7.5        | 1.1        | 1.0        | 1.5        | 44.8        |
| Ridge-West                         |          | 43%               | 31%        | 234                  | \$78        | 7.6        | 0.9        | 0.8        | 2.0        | 65.3        |
| Sub-Total Probable                 |          | 52%               | 29%        | 2,147                | \$50        | 4.1        | 1.0        | 0.4        | 1.2        | 33.5        |
| <b>Total Proven &amp; Probable</b> |          | <b>65%</b>        | <b>29%</b> | <b>7,747</b>         | <b>\$67</b> | <b>6.3</b> | <b>1.2</b> | <b>0.5</b> | <b>1.2</b> | <b>40.0</b> |

As noted, the proven and probable reserves are part of the current mine plan and as such are considered to be fair and reasonable estimates.

### Mineral Resources

Block model mineral resources are classified into measured, indicated and inferred categories based on the distance of a block from its nearest composite as follows:

- Measured mineral resource, similar to "proven reserve", has the highest degree of confidence (0-20 percent error in contained metal) and is within 15 meters from a given diamond drill hole.
- Indicated mineral resource, similar to "probable reserve" has a lower degree of confidence (20-70 percent error in contained metal) and is within 30 metres from a given diamond drill hole.
- Inferred mineral resource incorporates low confidence estimates (70-100 percent error in contained metal) and includes material within 50 metres from a given diamond drill hole.

Table 2 shows measured and indicated mineral resources for various mineral zones within and adjacent to the current mine area. Note that these estimates refer to *in situ* tonnes and grades – no dilution or extraction factors are incorporated and no mining plan has been undertaken for these resources. The measured and indicated resources have been expanded to include undiluted mining reserves thought to be unrecoverable at present – these comprise 70% and 40% of the measured and indicated resources respectively.

Densities for both resource categories range from 3.01 to 3.89 and average 3.43.

**Table 2 - Measured and Indicated Mineral Resources (Undiluted tonnes and grades – no recovery factors applied)**

| Area                                | Status    | NSR         | Tonnes (000s) | Zinc (%)   | Copper (%) | Lead (%)   | Gold (g/t) | Silver (g/t) |
|-------------------------------------|-----------|-------------|---------------|------------|------------|------------|------------|--------------|
| 43 Block                            | Measured  | \$71        | 633           | 5.4        | 1.6        | 0.4        | 1.9        | 37.4         |
| Battle                              |           | \$104       | 3,000         | 11.6       | 1.4        | 0.9        | 1.0        | 51.8         |
| Extension                           |           | \$67        | 261           | 5.4        | 1.7        | 0.4        | 1.2        | 28.9         |
| Gap                                 |           | \$142       | 515           | 14.1       | 2.0        | 1.0        | 2.4        | 129.2        |
| H-W-Mine                            |           | \$76        | 1,727         | 5.7        | 1.6        | 0.5        | 2.1        | 49.5         |
|                                     | Sub-Total | \$94        | 6,136         | 9.2        | 1.6        | 0.7        | 1.6        | 55.2         |
| 43 Block                            | Indicated | \$34        | 150           | 2.6        | 0.8        | 0.3        | 0.8        | 18.7         |
| 6-Level                             |           | \$69        | 114           | 6.9        | 0.4        | 1.2        | 1.6        | 122.9        |
| Battle                              |           | \$70        | 372           | 7.4        | 0.9        | 0.7        | 0.9        | 56.0         |
| Extension                           |           | \$60        | 349           | 4.6        | 1.5        | 0.4        | 0.9        | 54.4         |
| Gap                                 |           | \$114       | 41            | 12.5       | 1.3        | 1.5        | 1.5        | 94.9         |
| H-W                                 |           | \$48        | 1,581         | 2.7        | 1.3        | 0.3        | 1.8        | 26.4         |
| Lynx                                |           | \$130       | 241           | 11.5       | 2.0        | 1.2        | 3.3        | 105.0        |
| Marshall                            |           | \$65        | 589           | 5.8        | 0.6        | 0.8        | 2.0        | 98.8         |
| Price                               |           | \$99        | 399           | 9.4        | 1.4        | 1.3        | 2.3        | 74.9         |
| Ridge-West                          |           | \$88        | 416           | 8.4        | 1.1        | 0.9        | 2.3        | 76.5         |
|                                     | Sub-Total | \$67        | 4,252         | 5.6        | 1.1        | 0.6        | 1.8        | 58.2         |
| <b>Total Measured and Indicated</b> |           | <b>\$83</b> | <b>10,388</b> | <b>7.8</b> | <b>1.4</b> | <b>0.7</b> | <b>1.7</b> | <b>56.4</b>  |

Over the life of the operation, 70% of originally identified mineral resources have been elevated to mineable reserves status. For purposes of long range projections, it is recommended that the foregoing resource estimates be subjected to an even more rigorous reduction by taking into account the overall average extraction factor of 65% reported for the proven and probable reserves (Table 1).

Accordingly, the foregoing measured and indicated resources tonnage totals should be reduced by 35% - average grades would remain the same.

**Table 3 - Inferred Mineral Resources (in situ tonnes and undiluted grades)**

| Area         | NSR         | Tonnes (000s) | Zinc (%)   | Copper (%) | Lead (%)   | Gold (g/t) | Silver (g/t) |
|--------------|-------------|---------------|------------|------------|------------|------------|--------------|
| 43 Block     | \$87        | 11            | 6.7        | 1.4        | 2.0        | 3.4        | 69.7         |
| 6-Level      | \$61        | 57            | 5.9        | 0.3        | 0.9        | 1.8        | 102.7        |
| Battle       | \$70        | 34            | 9.5        | 2.2        | 1.2        | 1.5        | 110.9        |
| Extension    | \$56        | 440           | 4.1        | 1.6        | 0.4        | 0.8        | 36.2         |
| Lynx         | \$83        | 16            | 8.4        | 0.9        | 1.3        | 1.7        | 90.2         |
| Marshall     | \$49        | 621           | 4.7        | 0.4        | 0.5        | 1.3        | 62.8         |
| Price        | \$113       | 0.6           | 6.1        | 0.7        | 1.9        | 8.9        | 129.6        |
| Ridge-East   | \$48        | 326           | 4.7        | 0.7        | 0.8        | 0.8        | 41.1         |
| Ridge-West   | \$62        | 567           | 5.6        | 0.8        | 0.7        | 1.8        | 68.4         |
| Trumpeter    | \$90        | 211           | 3.9        | 3.4        | 0.3        | 2.4        | 57.7         |
| <b>Total</b> | <b>\$59</b> | <b>2,284</b>  | <b>4.9</b> | <b>1.1</b> | <b>0.6</b> | <b>1.4</b> | <b>57.4</b>  |

Because of the lower level of confidence inherent in this resource category, the writer is of the opinion that it is possible that only 50% of the reported inferred mineral resources might be upgraded to mineable reserves in the future.

## Revised Mineral Reserve and Resource Estimates

Table 4 contains a summary of reported mineral reserves and mineral resource estimates as revised by the writer.

**Table 4 – Revised Mineral Reserves and Resources – Myra Falls Operation**

| Category                            | Tonnes (000s) | NSR(\$C)    | Zn(%)      | Cu(%)      | Pb(%)      | Au(g/t)    | Ag(g/t)     |
|-------------------------------------|---------------|-------------|------------|------------|------------|------------|-------------|
| Proven Reserves                     | 5,600         | \$73        | 7.2        | 1.2        | 0.6        | 1.2        | 42.5        |
| Probable Reserves                   | 2,147         | \$50        | 4.1        | 1.0        | 0.4        | 1.2        | 33.5        |
| <b>Total Proven and Probable</b>    | <b>7,747</b>  | <b>\$67</b> | <b>6.3</b> | <b>1.2</b> | <b>0.5</b> | <b>1.2</b> | <b>40.0</b> |
| Measured Resources                  | 3,988         | \$94        | 9.2        | 1.6        | 0.7        | 1.6        | 55.2        |
| Indicated Resources                 | 2,764         | \$67        | 5.6        | 1.1        | 0.6        | 1.8        | 58.2        |
| <b>Total Measured and Indicated</b> | <b>6,758</b>  | <b>\$83</b> | <b>7.8</b> | <b>1.4</b> | <b>0.7</b> | <b>1.7</b> | <b>56.4</b> |
| Inferred Resources                  | 1,142         | \$59        | 4.9        | 1.1        | 0.6        | 1.4        | 57.4        |

### Comments

Proven and probable reserves as reported by the company are part of the current mining plan and are sufficient to maintain operations through the year 2010 at an annual mill throughput of 1,050,000 tonnes.

The revised Measured, Indicated and Inferred Mineral Resources are the writer's estimate of material that could be elevated to mineable reserve status. These estimates are considered to be conservative but assuming this to be the case, these would provide an additional seven years of production, taking the operation through the year 2017.

Beyond this, the potential for both the expansion of known mineral zones and the discovery of new mineral zones is considered to be excellent.

It is worthy of note that immediately prior to Myra Falls production in 1967, "reasonably assured" reserves were reported (Canadian Mines Handbook, 1966-67) as being 1.9 million tonnes grading 10.01% zinc, 2.19% copper, 1.10% lead and 2.06 g/t gold and 90.5 g/t silver. Virtually all of these "reserves" were contained in the Lynx deposit; subsequent mining and milling over the ensuing 19 years involved the Lynx and nearby Myra deposits. The discovery of the large H-W deposit (initial resource of 22 million tonnes) in the early 1980s was a major watershed for this operation and resulted in the expansion of mill throughput from 284,000 tonnes to 1,050,000 tonnes annually. Development of the H-W provided headings for continued exploration drilling resulting in the discovery of the Battle, Gap and several other deposits.

Over the life of the Myra Falls operation, close to 41 million tonnes of resources have been identified of which 23.9 million tonnes have been mined and processed (Table 5). More than 60% of total production has been derived from the H-W deposit.

In-house estimates of "potential tonnage" include material that may be available for mining based on current modeling within and adjacent to previous and current mining areas. Some 9.3 million tonnes of such material has been postulated – average grades are by no means definitive and the projected NSR value of C\$24/tonne is well below the current cutoff value of C\$45/tonne.

Upgrading and expanding the current reserves and resources is totally dependent on continued definition and exploratory diamond drilling, ideally involving annual expenditures of \$3 to \$4 million annually. No funding was available for exploratory drilling in 2003 and efforts during the current year have been hampered by lack of manpower. It is interesting to note that 300,000 to 500,000 tonnes have been added to the reserve base annually by "mining" old data.

The proposed ramp in the Lynx mine area will provide headings for additional definition drilling of the remaining Lynx material, the Marshall and Ridge deposits and exploration drilling in the highly prospective northwestern property area.

All of the known sulphide deposits are within a 6 x 2 km area in the central part of the Myra Falls property. The remaining 50% of the property area remains unexplored.

